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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,807	05/14/2001	Fujio Tanaka	1217-010754	8883

7590

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EXAMINER

CINTINS, IVARS C

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/854,807

Applicant(s)

TANAKA ET AL.

Examiner

Ivars C. Cintins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Wendel (U.S. Patent No. 3,975,267) in view of Kozak et al. (U.S. Patent No. 5,393,416), further in view of Kunin et al. (U.S. Patent No. 6,340,712). As pointed out in the previous Office action, Wendel discloses regenerating an ion exchange resin with a downward flow of regenerant solution (col. 4, line 32) and subsequently rinsing this resin (col. 4, lines 29). This reference further teaches (see col. 4, line 30; and col. 6, lines 57-61) that the regenerant must be passed through the resin at least twice. Accordingly, this primary reference discloses the claimed invention with the exception of using ultra-pure water to rinse the regenerated resin in an upward direction, and the space velocity of regenerant and water (claim 2). Kozak et al. teaches (see col. 17, lines 19-29) rinsing an ion exchange resin column with deionized water in an upward direction; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to rinse the regenerated resin of Wendel in an upward direction, in order to remove any residual regenerant in this resin. Also, Kunin et al. teaches rinsing an ion exchange resin with ultra-pure water (col. 6, lines 2-3); and it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the ultra-pure water of Kunin et al. to rinse the regenerated resins of the modified primary reference, in order to minimize contamination of these resins. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to treat the resin of the thus modified primary

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reference with the regenerant and ultra-pure water at the space velocities recited in claim 2, in order to ensure adequate contact between the resin and these fluids.

Claims 3 and 4 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Wendel, Kozak et al. and Kunin et al. as applied above, and further in view of Saieva (U.S. Patent No. 4,652,352). As pointed out in the previous Office action, the modified primary reference discloses the claimed invention with the exception of the specific material from which the processing equipment is constructed. Saieva discloses (see col. 5, line 33) employing an ion exchange resin column constructed from a vinyl chloride resin (i.e. PVC); and it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the column and other parts of the modified primary reference system from such a vinyl chloride resin, in order to obtain the advantages associated with this material (e.g. non-corrosive environment, lower construction costs, etc.) for the system of the modified primary reference.

Applicant's arguments filed October 20, 2004 have been noted and carefully considered are not deemed to be persuasive of patentability. Applicant argues that the pressurization treatment employed in Wendel is precluded by the "consisting of" language in claim 1. It is pointed out, however, that since claim 1 allows for treatments other than passing an aqueous solution of regenerant through the regeneration tower and passing ultra-pure water through this tower (i.e. because of the "comprising" language in the fourth line of this claim), and since the pressurization treatment employed in Wendel is carried out during the above noted liquid passing operations (see col. 4, lines 56-57), this pressurization treatment is not deemed to be precluded by claim 1.

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Applicant also argues that the method of Kozak is carried out to separate or to remove foreign particles from an ion exchange resin column based on the differences in their respective weight or density, and that this reference does not provide the teaching of washing an ion exchange resin. This argument has been noted and carefully considered, but is not deemed to be persuasive of patentability. It is pointed out that Kozak is relied upon merely for a showing that it is known to rinse an ion exchange resin with water in an upward direction; and since the rinsing step of Wendel must inherently be carried out in some direction, it would have been obvious to one of ordinary skill in the art at the time the invention was made to rinse the resin of Wendel in an upward direction, in order to remove residual regenerant from this resin.

Applicant also argues that Kunin never includes repeated downward application of a regenerant. This argument, however, is not deemed to be persuasive since the primary reference clearly provides this teaching.

Applicant further argues that Saieva fails to suggest the recited regeneration procedure. Again, this argument has been noted and carefully considered, but is not deemed to be persuasive of patentability. It is pointed out, however, that this reference is not relied upon for this teaching. Saieva is relied upon only for the teaching of employing an ion exchange resin column constructed from a vinyl chloride resin (i.e. PVC); and it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the column and other parts of the modified primary reference system from such a vinyl chloride resin, in order to obtain the advantages associated with this material (e.g. non-corrosive environment, lower construction costs, etc.) for the system of the modified primary reference.

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Applicant is advised that an amendment changing “comprising” to “consisting of” in line 4 of claim 1 would overcome the above rejections, and would render claims 1-4 allowable, since it would not have been obvious to omit the pressurization treatment from the reference process, because Wendel clearly teaches that pressurization during regeneration and rinsing is “absolutely necessary” (col. 4, lines 56-57).

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (571) 272-1155. The

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examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Duane Smith, can be reached at (571) 272-1166.

The centralized facsimile number for the USPTO is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Ivars C. Cintins**  
**Primary Examiner**  
**Art Unit 1724**

I. Cintins  
January 5, 2005